

Docket No. F-7917

Ser. No. 10/634,539

AMENDMENTS TO THE CLAIMS:

Please replace the claims with the claims provided in the listing below wherein status, amendments, additions and cancellations are indicated.

1. (Currently Amended) A method for analyzing a ground ~~estimating at least a laminar structure of ground~~, said method comprising:

positioning a plurality of microseismic oscillation wave sensors so that there is a sensor at each of at least 3 measurement points within an area at ground level, ~~for detecting one of a vertical component[[,]] and both the vertical and a horizontal component of microseismic oscillations, at a plurality of measurement points, such that there is a sensor at each of at least 3 measurement points within an area at ground level, for~~ to simultaneously measuring microseismic oscillations ~~measure microseisms at said such plural measurement points to obtain data generated by said microseismic oscillations, said data including one of horizontal vertical oscillation data[[,]] and/or and both vertical and horizontal oscillation data, generated by said microseismic oscillations;~~

changing the locations of said measurement points;

repeating the measurements; and

analyzing the obtained oscillation data.

Docket No. F-7917

Scr. No. 10/634,539

2. (Currently Amended) The method according to claim 1, wherein said microseismic oscillations ~~microseisms~~ to be measured are short-period microseisms observed at ground level.
3. (Previously Presented) The method according to claim 1, wherein two sensors are disposed on each of at least two straight lines passing through the ground to be measured, and a 360 degree azimuth is divided into an even-number of equal sections or straight lines parallel thereto such that sensor-to-sensor distances are equal on said straight lines.
4. (Previously Presented) The method according to claim 1, wherein said sensors are positioned at least a total of four points, including at least three points at equal spacings on a circumference of a circle, and at one point at a geometric center of the circle.
5. (Previously Presented) The method according to claim 1, wherein said sensors are positioned at least a total of four points, including at apices of a regular triangle, and at a geometric center of said triangle.

Docket No. F-7917

Ser. No. 10/634,539

6. (Currently Amended) The method according to any of claims 1 to 5, further comprising:

analyzing one of vertical oscillation data and both vertical and horizontal oscillation data, as measured simultaneously with said sensors;
determining whether the microseismic oscillations ~~microseismic oscillation waves~~ detected by said sensors are, or are not, surface waves; and
extracting and analyzing the surface waves.

7. (Currently Amended) The method according to any of claims 1 to 6, further comprising:

analyzing a correlation coefficient and phase difference of oscillation data, as measured by equally spaced sensors for each;
performing repeated analyses at varying sensor-to-sensor distances;
analyzing and computing a fundamental mode of surface waves, based on results of the respective analyses; and
analyzing and computing higher-mode wave-lengths.

8. (Currently Amended) The method according to any of claims 1 to 7, further comprising repeatedly performing measurement and analysis of said microseismic oscillations ~~microseisms~~ until existence of a relation between

Docket No. F-7917

Ser. No. 10/634,539

phase velocity and wavelength is alternatively established or refuted, such that when a relation is established therebetween, an inference of an accurate assessment of ground structure can be made.